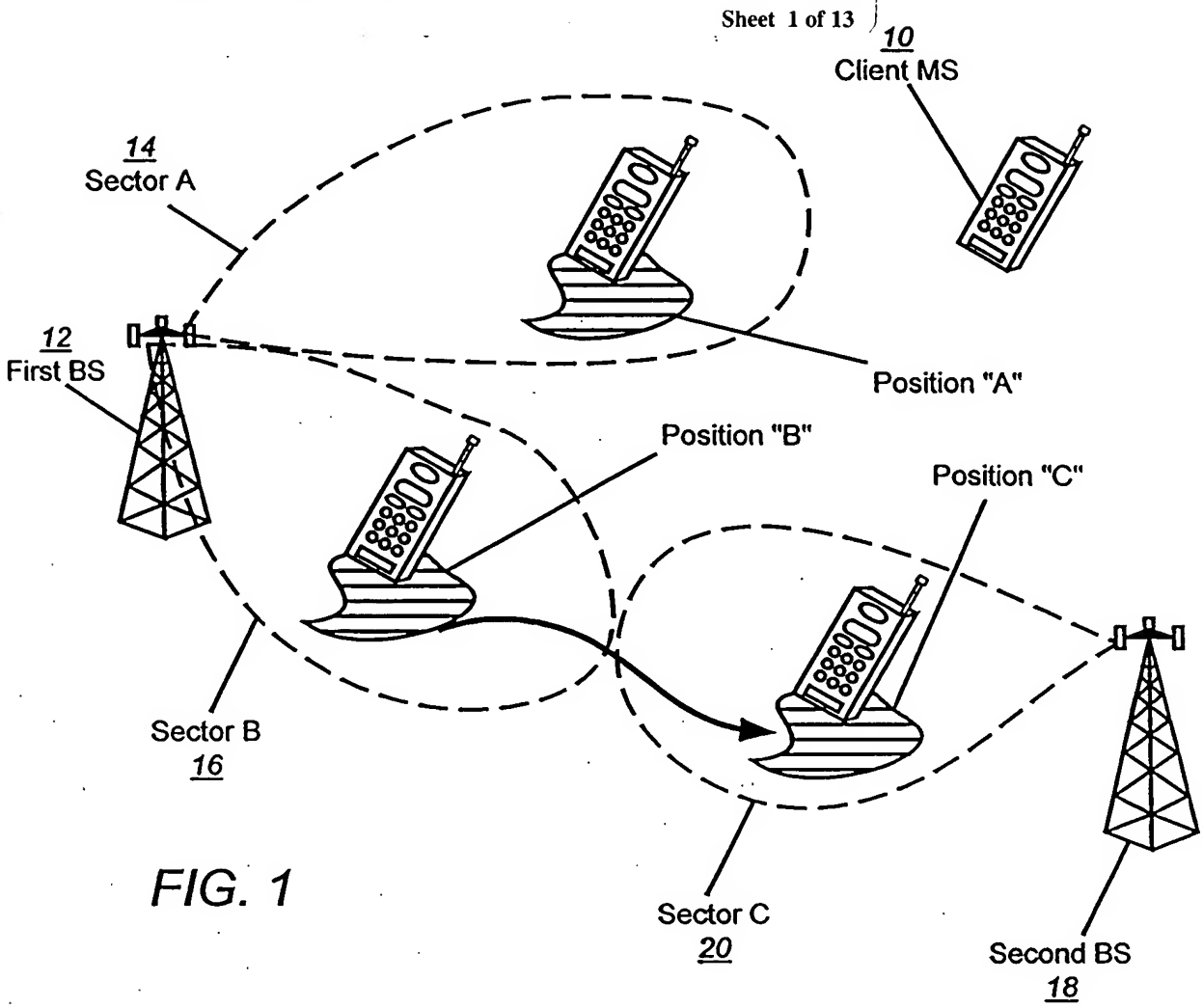
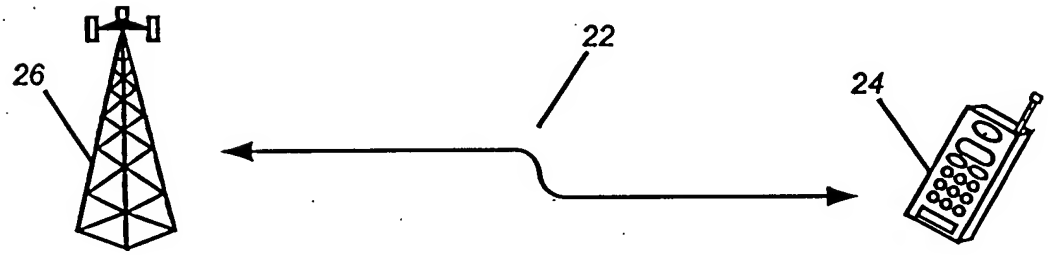


FIG. 1



Forward Link
Pilot Channel(s)
Sync Channel
Paging Channel(s)
Traffic Channels

Reverse Link
Access Channel
Traffic Channel(s)

FIG. 2

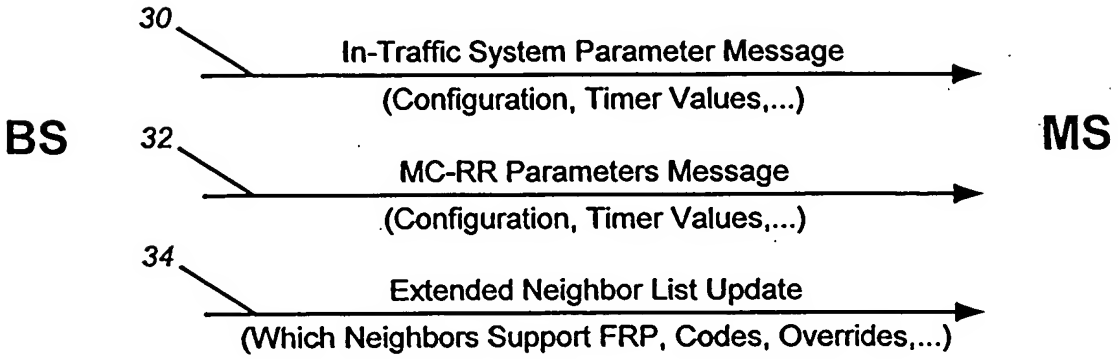

30
In-Traffic System Parameter Message
(Configuration, Timer Values,...)
BS
32
MS
MC-RR Parameters Message
(Configuration, Timer Values,...)
34
Extended Neighbor List Update
(Which Neighbors Support FRP, Codes, Overrides,...)

FIG. 3

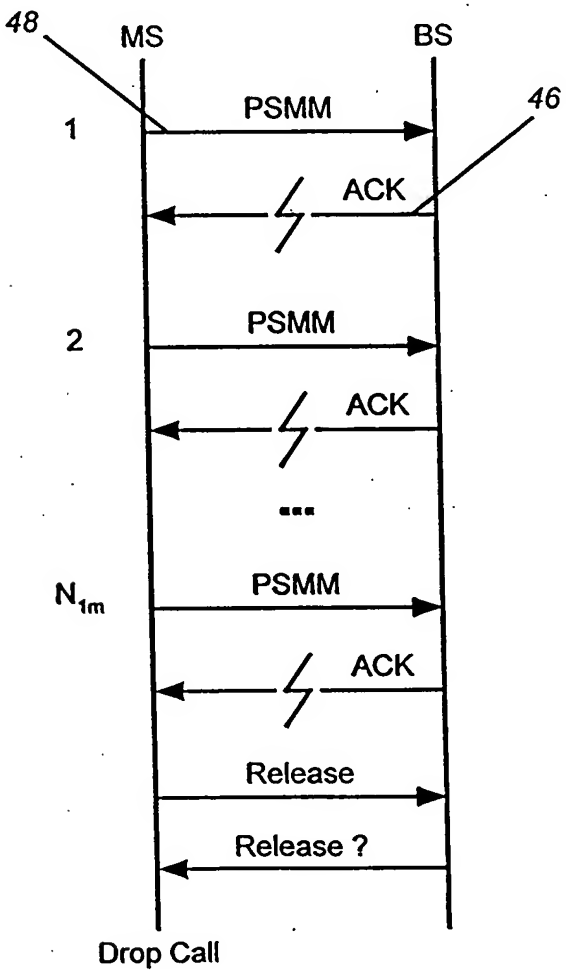

48
MS
BS
PSMM
46
1
ACK
PSMM
2
ACK
...
N1m
PSMM
ACK
Release
Release ?
Drop Call

FIG. 5

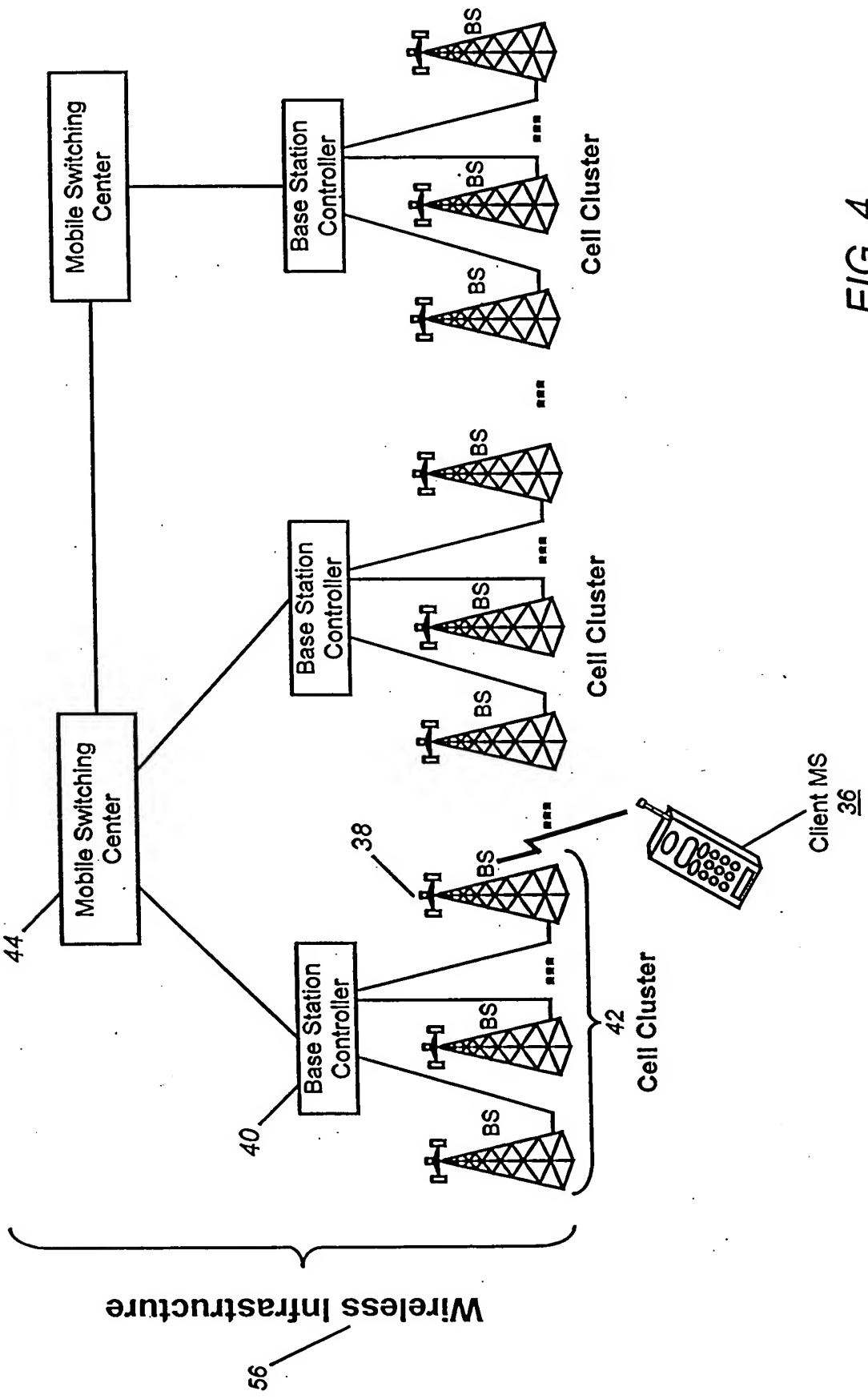

Wireless Infrastructure
56
Mobile Switching Center
44
Base Station Controller
40
Base Station Controller
Base Station Controller
BS
38
42
Cell Cluster
Cell Cluster
Cell Cluster
Client MS
36

FIG. 4

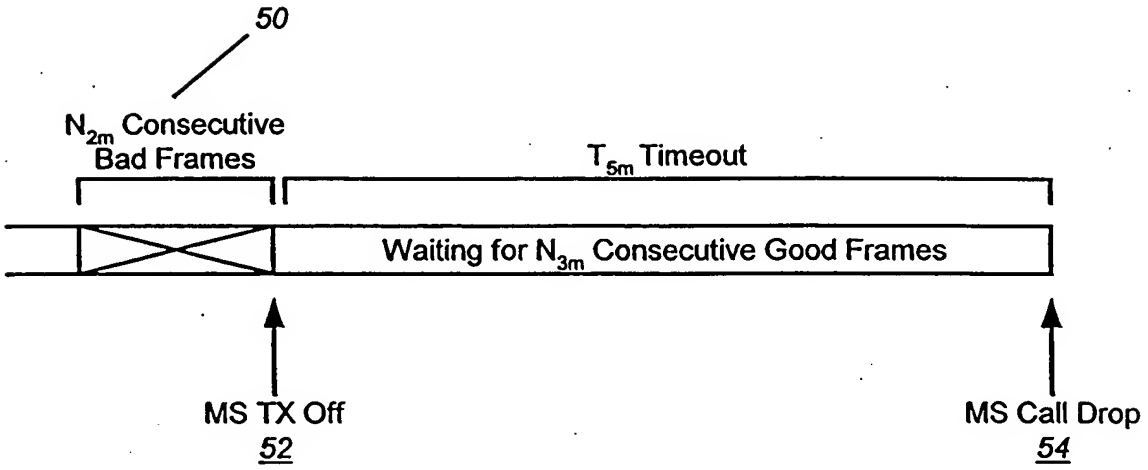

50
N_{2m} Consecutive Bad Frames
T_{5m} Timeout
Waiting for N_{3m} Consecutive Good Frames
MS TX Off
52
MS Call Drop
54

FIG. 6

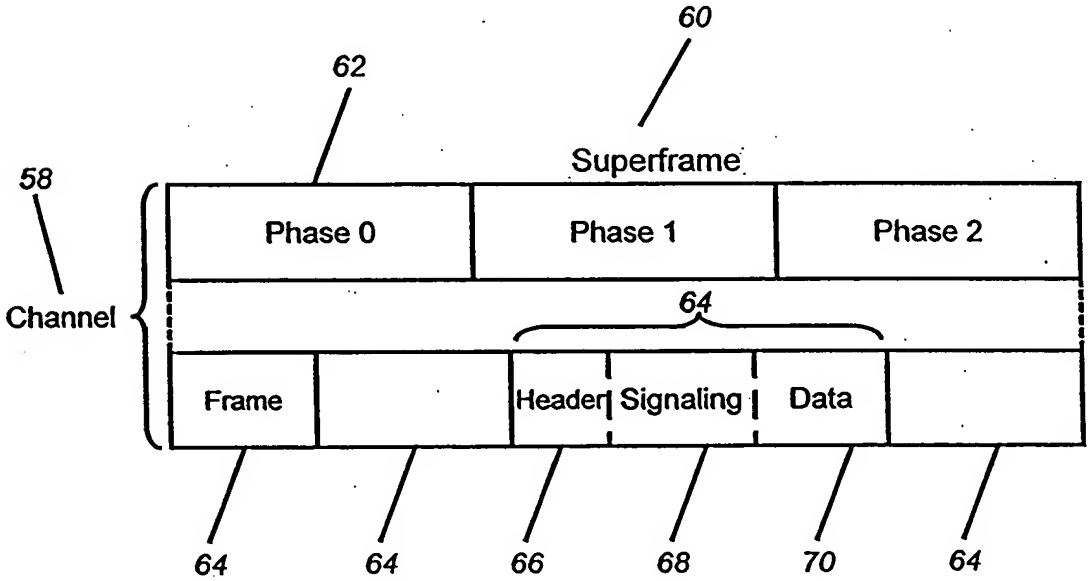

60
62
Superframe
58
Phase 0
Phase 1
Phase 2
Channel
64
Frame
Header
Signaling
Data
64
64
66
68
70
64

FIG. 7

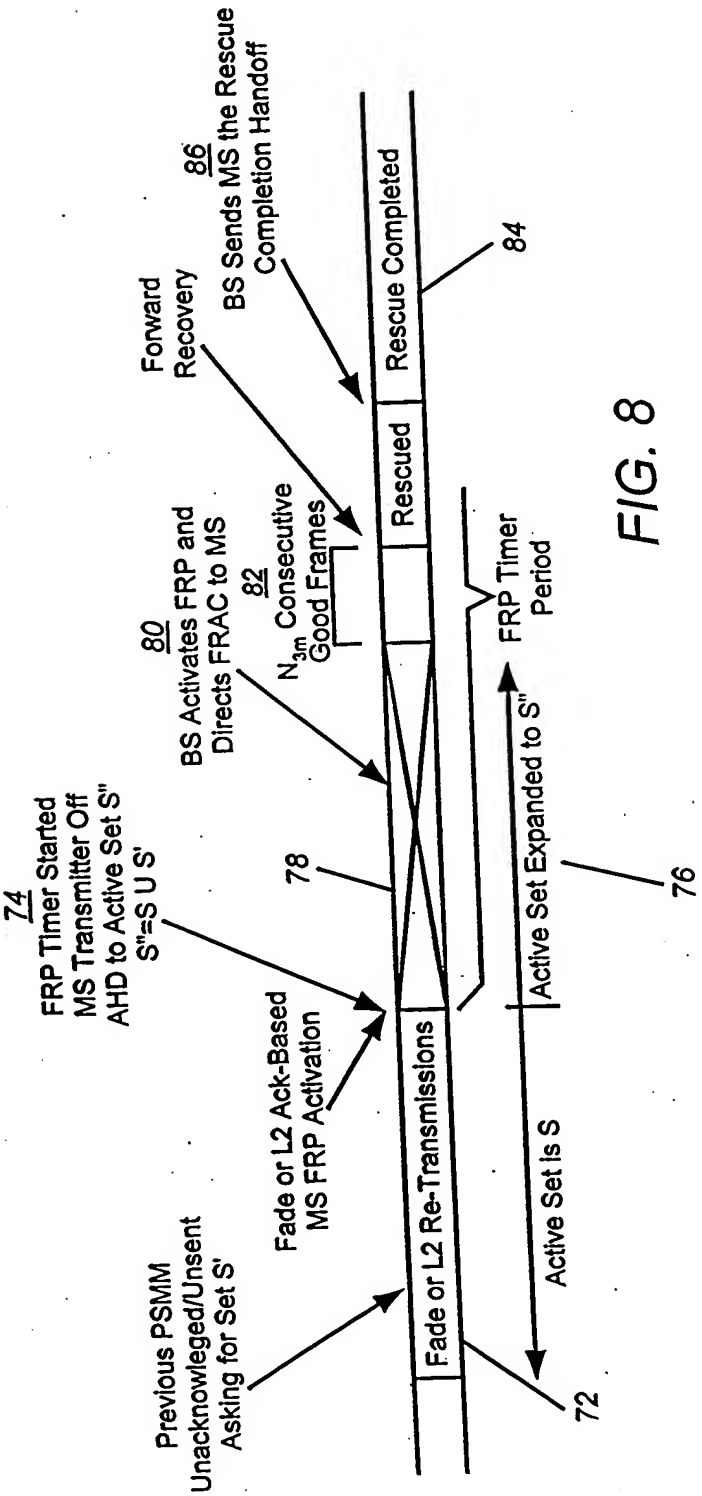

Previous PSMM Unacknowleged/Unsent Asking for Set S'
Fade or L2 Re-Transmissions
Fade or L2 Ack-Based MS FRP Activation
74 FRP Timer Started MS Transmitter Off AHD to Active Set S" S"=S U S'
78
BS Activates FRP and Directs FRAC to MS
80
82 N_{3m} Consecutive Good Frames
Rescued
Forward Recovery
86 BS Sends MS the Rescue Completion Handoff
Rescue Completed
84
FRP Timer Period
Active Set Expanded to S"
Active Set Is S
76
72

FIG. 8

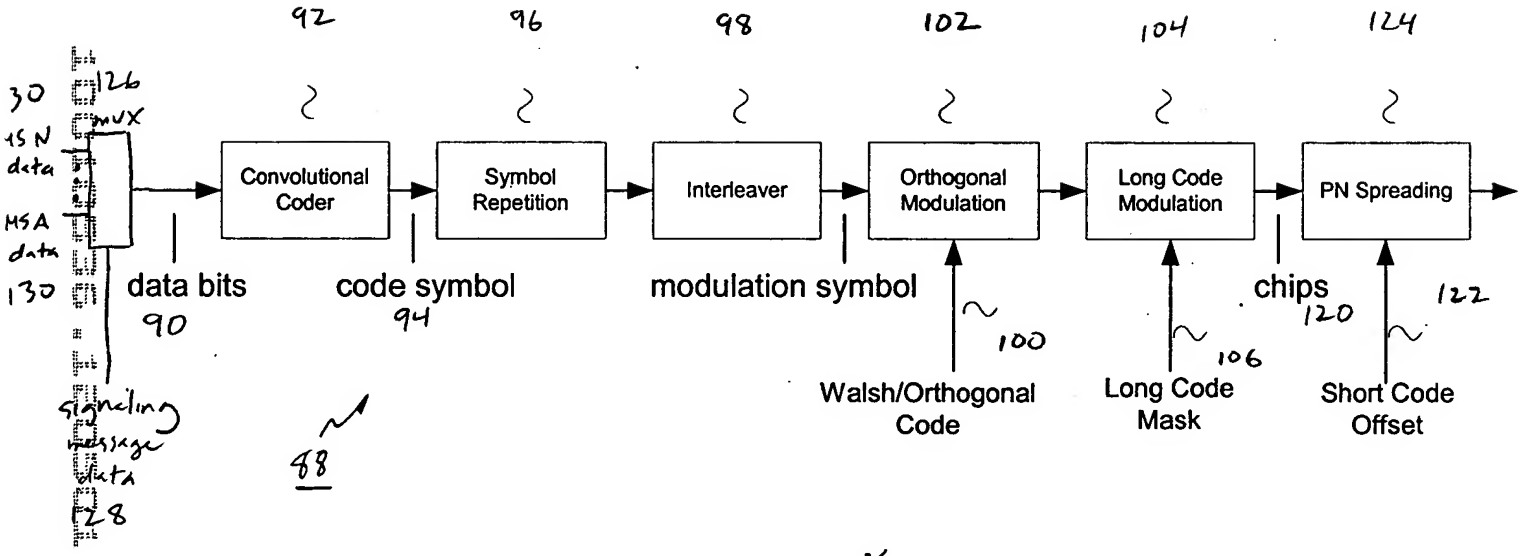
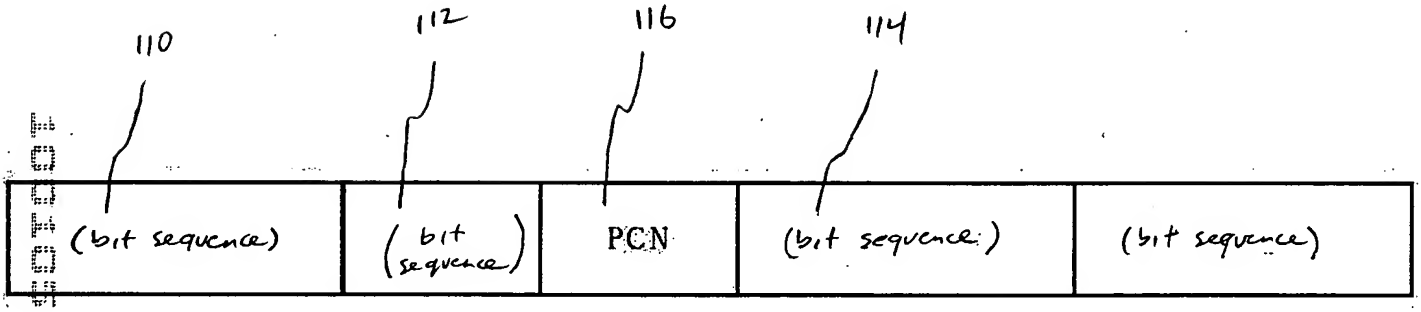

92
96
98
102
104
124
30
126
MUX
IS N data
MSA data
130
Convolutional Coder
Symbol Repetition
Interleaver
Orthogonal Modulation
Long Code Modulation
PN Spreading
data bits
90
code symbol
94
modulation symbol
chips
120
122
100
106
Walsh/Orthogonal Code
Long Code Mask
Short Code Offset
signaling message data
128
88

Figure 2

9



PCN - Paging Channel Number

Paging Channel Long Code Mask

108

FIG. 10

Field	Length (bits)
SIZE OF MOBILE ADDRESS	*3*
MOBILE COUNTRY CODE (MCC)	*10*
IMSI 11_12 (2 digit# based on IMSI)	*7*
IMSI_S (10 digit# based on IMSI)	*34*
USE_TIME	1
ACTION_TIME	0 or 6
SEQUENCE NUMBER	0 or X
SEARCH PARAMETERS INCLUDED	1
SEARCH PARAMETERS	0 or X
EXTRA PARAMETERS INCLUDED	1
EXTRA PARAMETERS	0 or X
FRAME_OFFSET	0 or 4
PRIVATE_LCM	0 or 1
RESET_L2	0 or 1
SERV_NEG_TYPE	0 or 1
POWER LEVELS	0 or X
BAND_CLASS	0 or 5
CDMA_FREQ	0 or 11
RETURN_IF_HANDOFF_FAIL	0 or 1
NUM_PILOTS	3

FIG. 11

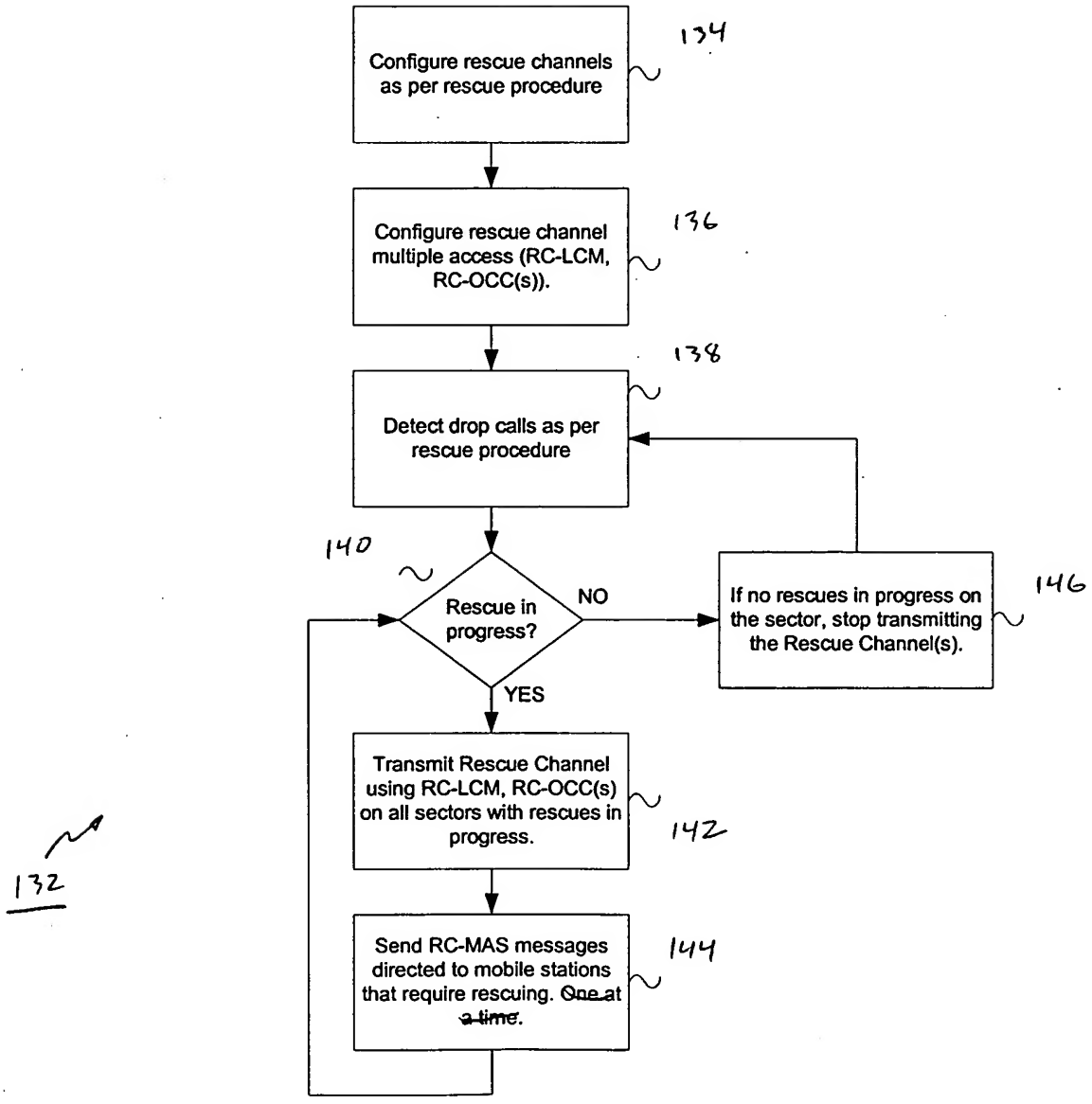

Configure rescue channels as per rescue procedure
134
Configure rescue channel multiple access (RC-LCM, RC-OCC(s)).
136
Detect drop calls as per rescue procedure
138
140
Rescue in progress?
NO
YES
If no rescues in progress on the sector, stop transmitting the Rescue Channel(s).
146
Transmit Rescue Channel using RC-LCM, RC-OCC(s) on all sectors with rescues in progress.
142
Send RC-MAS messages directed to mobile stations that require rescuing. One at a time.
144
132

Figure 12

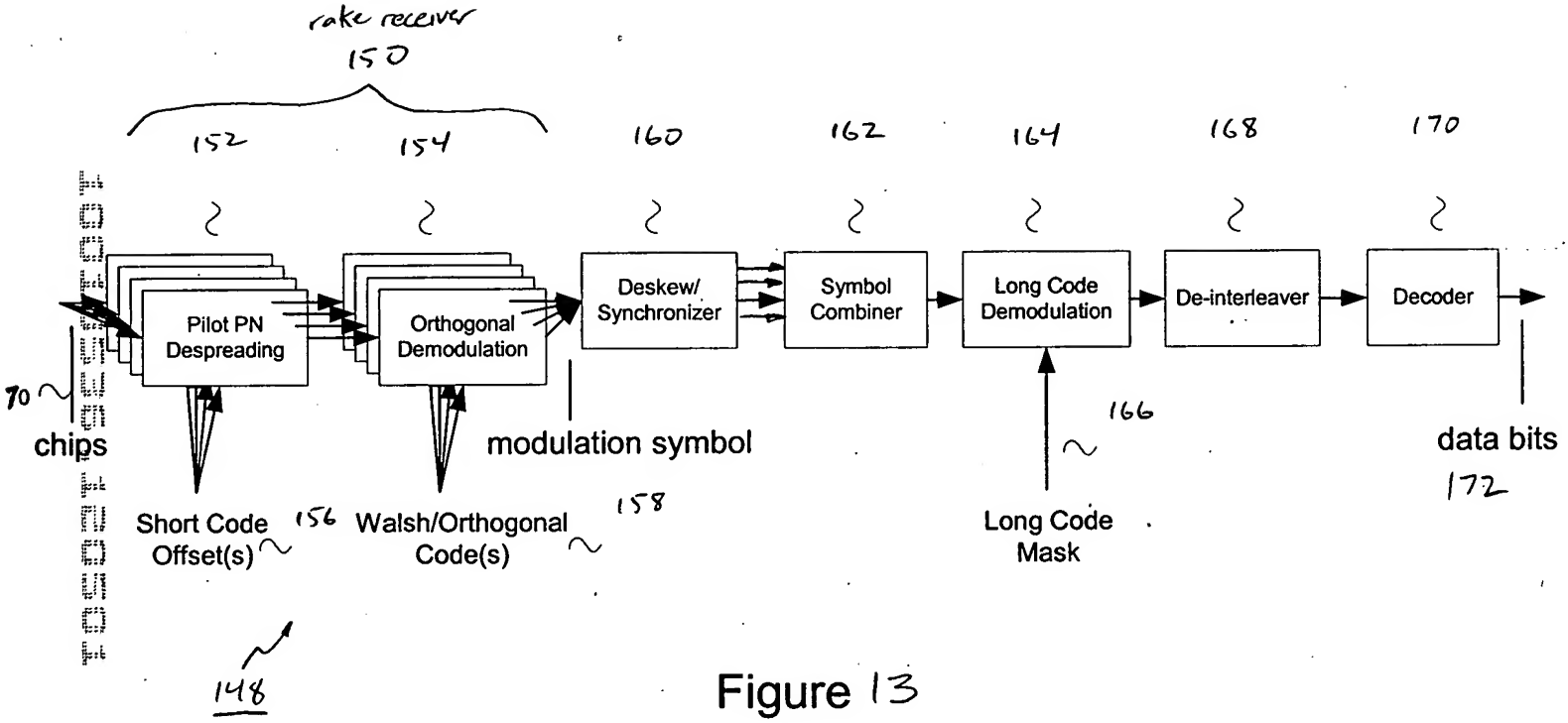

rake receiver
150
152
154
160
162
164
168
170
Pilot PN Despreading
Orthogonal Demodulation
Deskew/ Synchronizer
Symbol Combiner
Long Code Demodulation
De-interleaver
Decoder
70
chips
modulation symbol
166
data bits
172
Short Code Offset(s)
156
Walsh/Orthogonal Code(s)
158
Long Code Mask
148

Figure 13

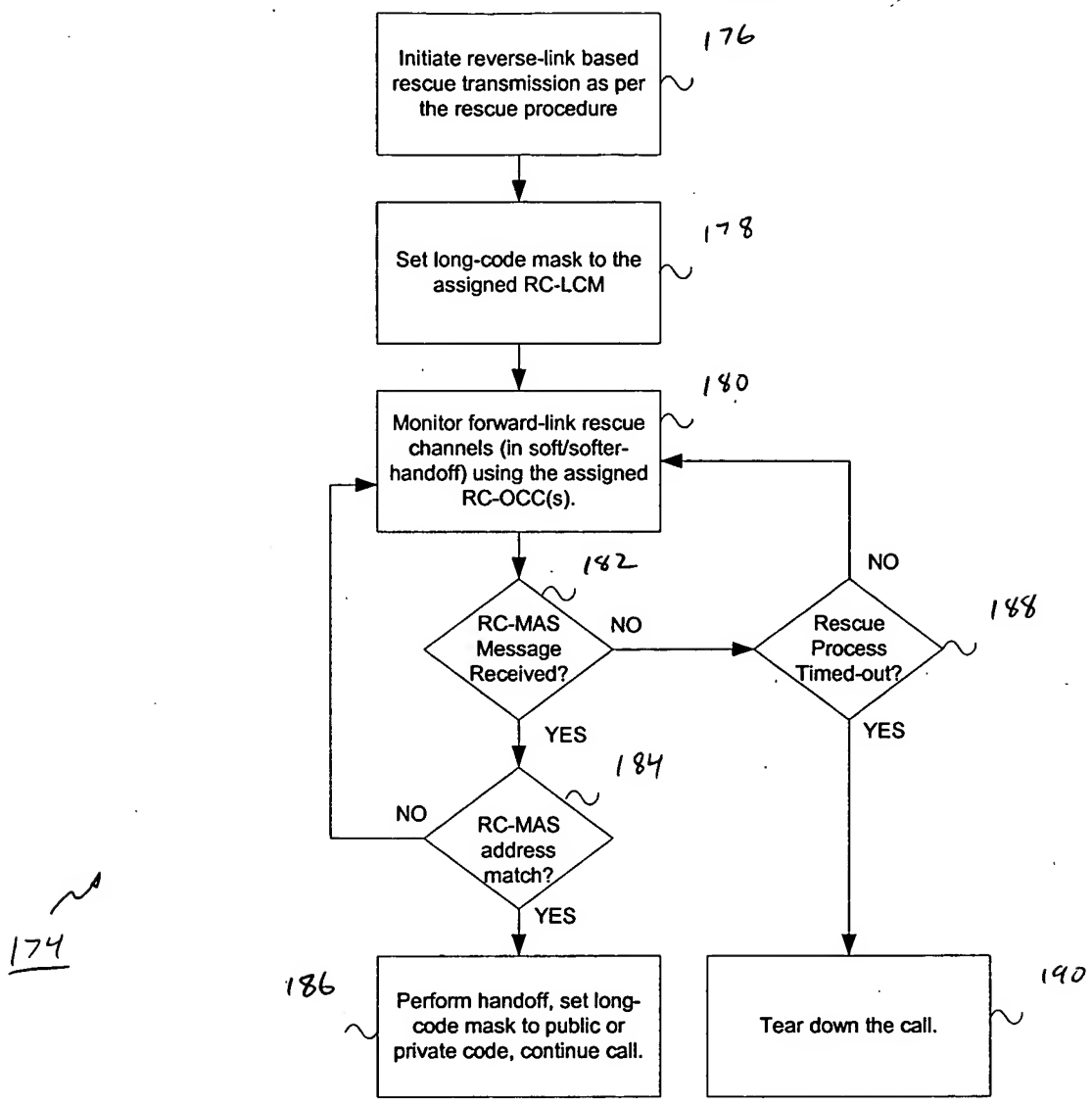

Initiate reverse-link based rescue transmission as per the rescue procedure
176
Set long-code mask to the assigned RC-LCM
178
Monitor forward-link rescue channels (in soft/softer-handoff) using the assigned RC-OCC(s).
180
182
RC-MAS Message Received?
NO
YES
Rescue Process Timed-out?
188
NO
YES
184
RC-MAS address match?
NO
YES
174
186
Perform handoff, set long-code mask to public or private code, continue call.
Tear down the call.
190

Figure 14

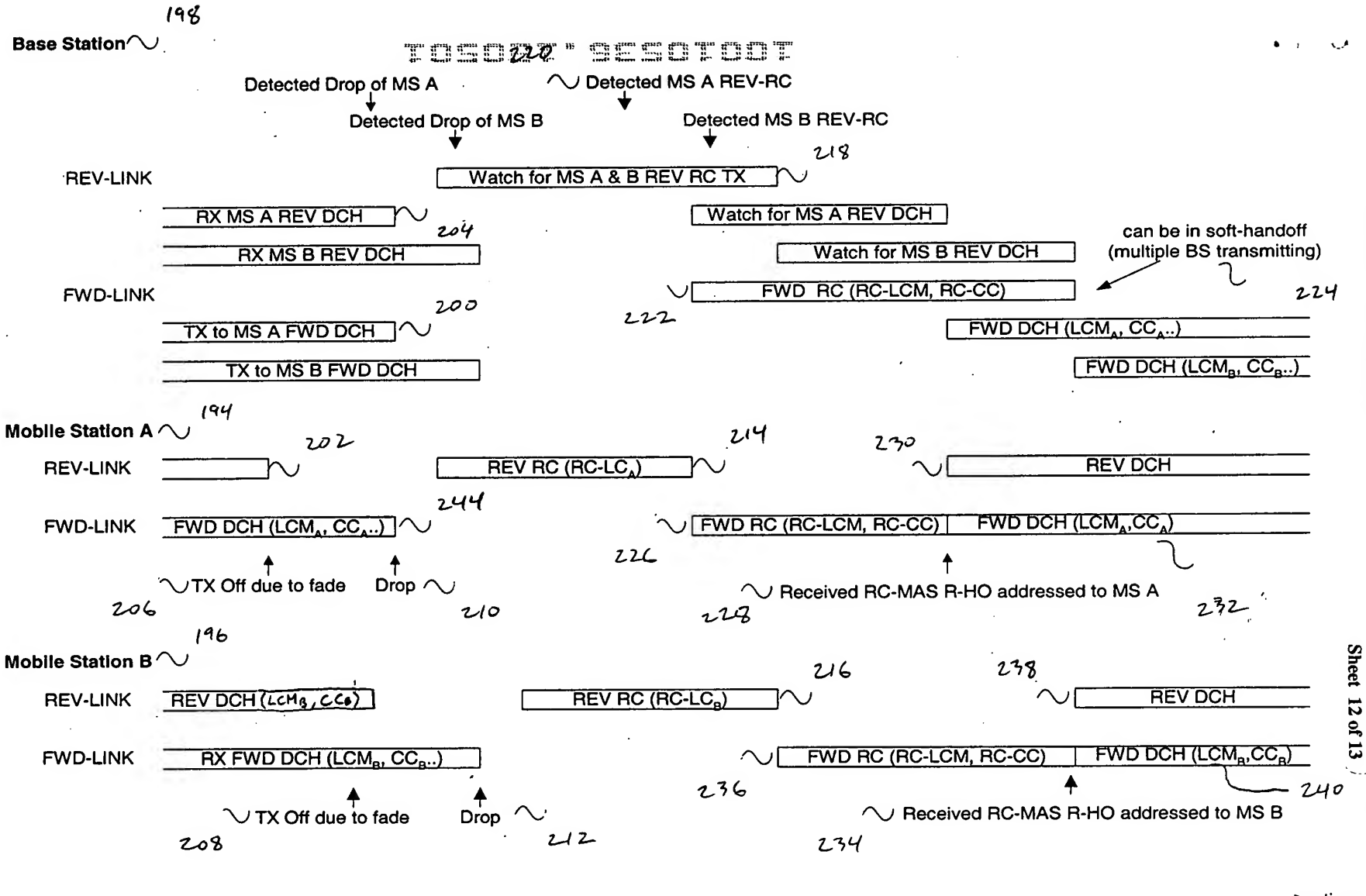

198
Base Station
Detected Drop of MS A
Detected MS A REV-RC
Detected Drop of MS B
Detected MS B REV-RC
218
REV-LINK
Watch for MS A & B REV RC TX
RX MS A REV DCH
204
RX MS B REV DCH
Watch for MS A REV DCH
Watch for MS B REV DCH
can be in soft-handoff
(multiple BS transmitting)
FWD-LINK
200
FWD RC (RC-LCM, RC-CC)
222
224
TX to MS A FWD DCH
TX to MS B FWD DCH
FWD DCH (LCM$_A$, CC$_A$..)
FWD DCH (LCM$_B$, CC$_B$..)
194
Mobile Station A
202
214
230
REV-LINK
REV RC (RC-LC$_A$)
REV DCH
244
FWD-LINK
FWD DCH (LCM$_A$, CC$_A$..)
FWD RC (RC-LCM, RC-CC)
FWD DCH (LCM$_A$,CC$_A$)
226
TX Off due to fade
Drop
Received RC-MAS R-HO addressed to MS A
206
210
228
232
196
Mobile Station B
216
238
REV-LINK
REV DCH (LCM$_B$, CC$_B$)
REV RC (RC-LC$_B$)
REV DCH
FWD-LINK
RX FWD DCH (LCM$_B$, CC$_B$..)
FWD RC (RC-LCM, RC-CC)
FWD DCH (LCM$_B$,CC$_B$)
236
240
TX Off due to fade
Drop
Received RC-MAS R-HO addressed to MS B
208
212
234
time
192

Figure 15

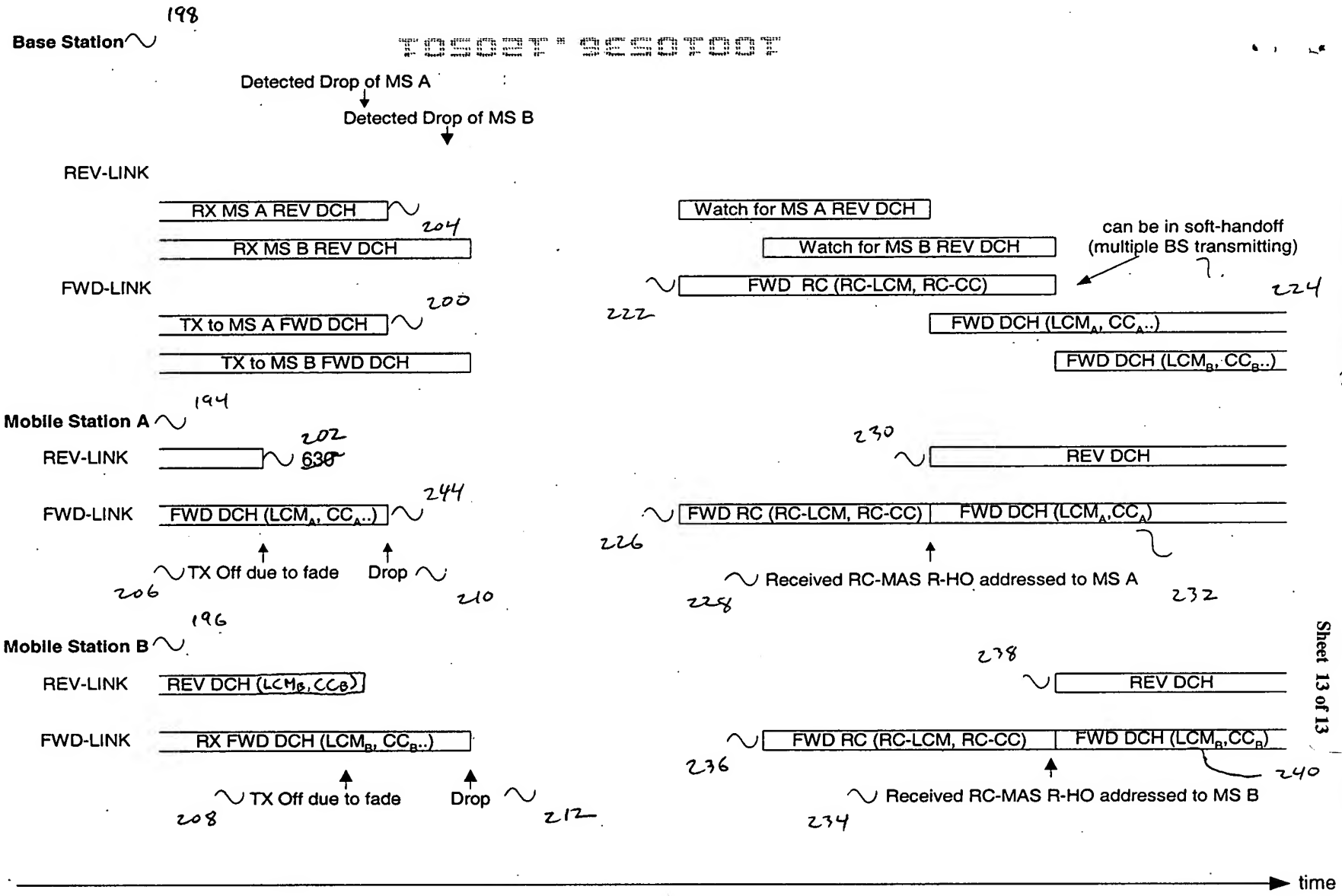


Figure 16

Title: Minimum Interference Multiple-Access Method And System For Connection Rescue
Inventor: Jason F. HIU[redacted]GER
Application No.: not [redacted]gned
Docket No.: 44040200[redacted]

Sheet 13 of 13